

What is claimed is:

1 For use in a model train, a control and motor arrangement,
 2 comprising:
 3 a motor, configured and arranged to generate a locomotive force for
 4 propelling the model train; and *a*
 5 a control arrangement, coupled to receive speed information from the
 6 motor and configured and arranged to cause power to be applied to said motor at
 7 different times based on a combination of a plurality of control signals and a pulse and/or
 8 modulation signal.

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 1 2. A control and motor arrangement, according to claim 1,
 2 wherein the control arrangement is coupled to receive information from
 3 the motor.

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 1 3. A control and motor arrangement, according to claim 2,
 2 wherein the information received from the motor includes at least one of
 3 the following:
 4 rotational speed information, and rotational position information.

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 1 4. A control and motor arrangement, according to claim 2,
 2 wherein the control arrangement is configured and arranged to adjust an
 3 amount of power supplied to the motor in response to changes in the information
 4 received from the motor.

1 5. A control and motor arrangement, according to claim 2,
 2 wherein the information received from the motor is provided to a sound
 3 control arrangement.

1 6. A control and motor arrangement, according to claim 5,
2 wherein the sound control arrangement is configured and arranged to
3 select a sound effect for playing as a function of the information received from the motor.

1 7. A control and motor arrangement, according to claim 1,
2 wherein the control arrangement is configured and arranged to simulate
3 effects related to inertia.

1 8. A control and motor arrangement, according to claim 7,
2 wherein the control arrangement is configured and arranged to, in
3 response to power being removed from the model train, supply power to the motor from
4 an alternate power source.

1 9. A control and motor arrangement, according to claim 8,
2 wherein the alternate power source comprises a battery arrangement.

1 10. A control and motor arrangement, according to claim 7,
2 wherein the control arrangement is configured and arranged to, in
3 response to a train start command, gradually supply power to the motor.

1 11. A control and motor arrangement, according to claim 1,
2 wherein the motor is selected from the group consisting of a DC can-type
3 motor, an ODYSSEYTM-type motor, and a PULLMORTM-type motor.

1 12. For use in a model train, a control and motor arrangement,
2 comprising:
3 a motor, configured and arranged to generate a locomotive force for
4 propelling the model train; and
5 a control arrangement, configured and arranged to provide a speed;

control signal to the motor generated as a function of speed information received from the motor, and further configured and arranged to provide the information received from the motor to a sound control arrangement.

13. For use in a model train, a control and motor arrangement, comprising:

a motor, configured and arranged to generate a locomotive force for propelling the model train;

a power arrangement, coupled to a model railroad track used by the model train and configured and arranged to supply power to the control and motor arrangement;

a radio control interface, configured to receive commands from a radio controller unit;

a process control arrangement, coupled to receive speed information from the motor and configured and arranged to generate a plurality of motor control signals based upon a combination of a plurality of speed feedback signals in a pulse modulation signal;

a motor control arrangement, responsive to said motor control signals and coupled to receive power from the power arrangement and configured and arranged to apply power to motor at different times;

a sound information arrangement, operatively coupled to receive rotational speed and positional information from the motor and to provide the rotational speed and positional information to a sound control arrangement for railroad sounds.

14. A control and motor arrangement, according to claim 13, further comprising a short circuit protection arrangement, operatively coupled to the motor and configured and arranged to remove power from the motor in response to a current flow exceeding a predefined threshold.

15. A control and motor arrangement, according to claim 13,

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1 16. A control and motor arrangement, according to claim 15,
2 wherein the memory comprises a nonvolatile memory.

1 17. A control and motor arrangement, according to claim 15,
2 wherein the user-defined information includes a mapping of a motor
3 rotational speed to a land speed of the train.

項目	1990年	1991年	1992年	1993年	1994年	1995年	1996年	1997年	1998年	1999年	2000年	2001年	2002年	2003年	2004年	2005年	2006年	2007年	2008年	2009年	2010年	2011年	2012年	2013年	2014年	2015年	2016年	2017年	2018年	2019年	2020年	2021年	2022年	2023年	2024年	2025年	2026年	2027年	2028年	2029年	2030年	2031年	2032年	2033年	2034年	2035年	2036年	2037年	2038年	2039年	2040年	2041年	2042年	2043年	2044年	2045年	2046年	2047年	2048年	2049年	2050年	2051年	2052年	2053年	2054年	2055年	2056年	2057年	2058年	2059年	2060年	2061年	2062年	2063年	2064年	2065年	2066年	2067年	2068年	2069年	2070年	2071年	2072年	2073年	2074年	2075年	2076年	2077年	2078年	2079年	2080年	2081年	2082年	2083年	2084年	2085年	2086年	2087年	2088年	2089年	2090年	2091年	2092年	2093年	2094年	2095年	2096年	2097年	2098年	2099年	2100年																																																								
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